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10/525,839

02/25/2005

Kazuyuki Oku

OKU7

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1444 7590 10/03/2008
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EXAMINER

HENRY, MICHAEL C

ART UNIT

PAPER NUMBER

1623

MAIL DATE

DELIVERY MODE

10/03/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/525,839

Applicant(s)

OKU ET AL.

Examiner

MICHAEL C. HENRY

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12 and 17-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 17-22 is/are allowed.
- 6) ☐ Claim(s) 12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

DETAILED ACTION

The following office action is a responsive to the Amendment filed, 07/15/08.

The amendment filed 07/15/08 affects the application, 10/525,839 as follows:

1. Claims 12, 17-22 have been amended. Claims 13-14 have been canceled.

Applicant's amendments have overcome the claim objections of the prior office action mailed 03/26/08. Consequently, the said claim objections are withdrawn.

However, the rejection made under 35 U.S.C. 103(a) is maintained.

2. The responsive to applicants' arguments is contained herein below.
3. Claims 12, 17-22 are pending in the application

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oku et al. (EP 1321148 A1).

In claim 12, applicant claims a method for inhibiting a radical reaction, comprising incorporating a composition as an effective ingredient a cyclotetrasaccharide represented by $\text{cyclo}\{\rightarrow 6\}\text{-}\alpha\text{-D-glucopyranosyl-(1}\rightarrow 3\text{)-}\alpha\text{-D-glucopyranosyl-(1}\rightarrow 6\text{)-}\alpha\text{-D-glucopyranosyl-(1}\rightarrow 3\text{)-}\alpha\text{-D-glucopyranosyl-(1}\rightarrow \text{)}$ or a mixture of said cyclotetrasaccharide and its saccharide derivative(s) into a composition comprising one or more unsaturated compounds selected from

the group consisting of fatty acids, simple lipids, conjugated lipids and alcohols in order to prevent an ingredient in said composition other than said unsaturated compound from being denatured by a peroxide of said unsaturated compound, formed by radical reaction

Oku et al. disclose a method for inhibiting the reduction of active oxygen eliminating activity (which involves a radical reaction), which comprises a step of incorporating the inhibitory agent cyclotetrasaccharide comprising cyclo{→6)-α-D-glucopyranosyl-(1→3)- α-D-glucopyranosyl-(1→6)-α-D-glucopyranosyl-(1→3)-α-D-glucopyranosyl-(1→} into a plant substance with active oxygen eliminating activity in an aqueous system (see abstract and claims 5-10; also see sections [0004] to [0006]). Furthermore, Oku et al. disclose that plants antioxidants can also be incorporated into said composition (see abstract and claims 5-10; also see sections [0004] to [0006]). In addition Oku et al. disclose that the antioxidant can be enzymes, pigments, polyphenols, and vitamins (see section [0011] and claim 8). Also, Oku et al. disclose that said composition can be as a food product, cosmetic, pharmaceutical (see examples, claims and entire reference).

The difference between applicant's claimed method and the method disclosed by Oku et al. is that Oku et al. does not explicitly disclose preventing denaturation of an ingredient in said composition. However, as acknowledged by applicant, it is well known that products mainly composed of organic compounds such as lipids, dyes, and synthetic high molecules will be deteriorated in quality and function during their storage as a result of undesired odor occurrence, color changing, color deterioration, hardening, decomposition, quality changing, etc., and it is also well known that peroxides which are formed in food products and pharmaceuticals, through radical reaction, will deteriorate useful ingredients contained therein such as proteins, peptides

and/or amino acids, and also augment the reduction of their quality and function (see last paragraph of page 1 to 1st paragraph of page 2 of applicant's specification). It should be noted that some vitamins such as vitamin A are unsaturated compounds and that some vitamins such as vitamin A (retinol or vitamin A alcohol) is also an alcohol as its name (retinol which contains the standard chemical name ending (-ol) for an alcohol) suggests.

It would have been obvious to one having ordinary skill in the art, at the time the claimed invention was made in view of Oku et al. to inhibit a radical reaction, comprising incorporating a composition of said cyclotetrasaccharide into a composition (such as a food or pharmaceutical) comprising an unsaturated organic compound(s) such as vitamin A which is an alcohol in order to prevent an ingredient(s) such as a protein or peptide from being denatured in said composition by peroxides which are formed through said radical reaction.

One having ordinary skill in the art would have been motivated, in view of Oku et al. to inhibit a radical reaction, comprising incorporating a composition of said cyclotetrasaccharide into a composition (such as a food or pharmaceutical) comprising an unsaturated organic compound(s) such as vitamin A which is an alcohol in order to prevent an ingredient(s) such as a protein or peptide from being denatured in said composition by peroxides which are formed through said radical reaction. It should be noted that applicant's claim to foreign priority over Japan 2002-256069 (08/30/2002) has not been perfected, since an English translation of the said foreign priority document is not filed.

Allowable Subject Matter

The examiner has found claims 17-22 to be unobvious over the prior art of record and therefore to be allowable over the prior art of record. The present invention relates a radical

reaction inhibitory agent, comprising as an effective ingredient a cyclotetrasaccharide represented by cyclo {→6)-α-D-glucopyranosyl-(1→3)- α-D-glucopyranosyl-(1→6)-α-D-glucopyranosyl-(1→3)-α-D-glucopyranosyl-(1→} or a mixture of said cyclotetrasaccharide and its saccharide derivative(s) and to method of using said agent. Though the compound of the present invention are similar to the compounds of the prior art, the method of claims 17-22 is not suggested in the prior art, nor is obvious over the prior art. In particular, the prior art does not disclose treating the said disease or disorders, comprising administering said cyclotetrasaccharide composition to a person as recites in said claims.

Response to Arguments

Applicant's arguments with respect to claim 12 has been considered but are not found convincing.

The applicant argues that it should be noted that Oku does not teach inhibiting the reduction of active oxygen eliminating activity in a composition as defined in claim 12 as amended, that is, "a composition comprising one or more unsaturated compounds selected from the group consisting of fatty acids, simple lipids, conjugated lipids and alcohols." However, Oku disclose that disclose that the antioxidant can be enzymes, pigments, polyphenols, and vitamins (see section [0011] and claim 8). Consequently, one of ordinary skill in the art would be motivated to a vitamin such as vitamin A which is an unsaturated compound and is also an alcohol as its name (retinol which contains the standard chemical name ending (-ol) for an alcohol) suggests.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael C. Henry whose telephone number is 571-272-0652. The examiner can normally be reached on 8.30am-5pm; Mon-Fri. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Michael C. Henry
September 17, 2008.

/Shaojia Anna Jiang, Ph.D./
Supervisory Patent Examiner
Art Unit 1623